With the Writer's Compliments.]

FIFTH ANNUAL REPORT

ON THE

SANITARY CONDITION

OF

MERTHYR TYDFIL,

BEING FOR THE YEAR 1869,

PREPARED FOR THE LOCAL BOARD OF HEALTH BY THEIR

MEDICAL OFFICER,

THOMAS JONES DYKE,

FELLOW OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND;
MEMBER OF THE BRITISH MEDICAL ASSOCIATION;
HONORARY MEMBER OF THE METROPOLITAN ASSOCIATION OF OFFICERS OF HEALTH, ETC, ETC.

PUBLISHED BY

M. W. WHITE AND SONS,

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"The alleviation of the miseries, and the promotion of the welfare of men, must be sought by those who will not lose their pains in that diligent, patient, loving study of all the multitudinous aspects of nature, the results of which constitute exact knowledge, or science."

Inaugural Address of Professor HUXLEY.

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Duties of Medical Officer as approved by the Merthyr Tydfil Local Board of Health, the 4th January, 1866.

1.—To ascertain what local causes prejudicially affect the Public Health in this District, to inform the Board of those discovered causes, and to suggest such means for their removal as Medical Science can advise.

2.—To seek information of the occurrence of cases of epidemic, endemic, or contagious diseases, and when informed to visit the localities, ascertain the extent of the malady, the local causes likely to conduce to the diffusion thereof, and give such warning as may induce the persons affected to have recourse to medical treatment. In case of an outbreak of Small Pox—to enquire into the history thereof, and as to the practice of vaccination in the neighbourhood.

3.—To inspect any meat exposed for sale for human food, whenever required so to do by an Officer of this Board, or any Police Officer, and to give his opinion as to the fitness or otherwise of such meat being used for human food, whenever required by a Justice of the Peace.

4.—Upon any complaint received by him of the emission of any noxious or offensive smell from any process of trade carried on in any manufactory, yard, house, or premises, or of atmospheric pollution from any drains or sewers, to enquire into the causes, and report upon the means for the prevention thereof.

5.—To perform any duties imposed by any Act of Parliament on the Officer of Health, or Sanitary Inspector.

6.—To attend the Meetings of the Local Board when necessary.

7.—To Report Quarterly the nature and amount of sickness and death, the number of births, and of persons vaccinated; and to present Annually a report and tabular return of the ascertained sickness and mortality of the District.

CORRECTIONS.

Page 9.—Line 11. for *or* read *and*.

„ „ 15. after *or*, insert, *at home*.

„ „ 17. after *on the*, omit, *third*.

22. „ 10. for 10·55 feet, read 1055 feet.

FIFTH REPORT

ON THE

Sanitary Condition of Merthyr Tydfil.

1869

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FIFTH ANNUAL REPORT

ON THE

SANITARY CONDITION OF MERTHYR TYDFIL

BEING THAT

FOR THE YEAR 1869.

MERTHYR, 1ST OCTOBER, 1870.

GENTLEMEN,—I have the honour to submit to you the following as my report upon the Sanitary Condition of the district under your charge during the year 1869.

CHAPTER 1.—*Population, Marriages, Births, Vaccinations, Deaths, and Burials, in* 1869.

1.—*Population.* The Births registered in the year numbered 1952 : the Deaths are set down at 1269. The difference between these two sums—683, would express the natural increase of the population. As the trade of the district did not in the period undergo any marked increase, as the new houses erected in the parish have been but few, recollecting also the continuous exodus of working men to foreign lands, I propose to add but two-thirds of the natural increase of the numbers of the people—that is 454—to the sum of those who were estimated to be living on the 31st of December, 1868—55,451 : these two sums being added amount to 55,905, and this is my estimate of the population living in the parish on the 31st December, 1869.

There has apparently taken place a gradual diminution of the number of houses occupied, and a gradual increase in the average number of persons resident in each house since 1865. In that year the inhabited houses numbered 10,718, each occupied by five persons. In 1866 the houses occupied were 10,589, the inhabitants averaged 5. In 1867 the inhabited houses amounted to 10,500: and the persons resident in each to $5\frac{3}{10}$. In 1868 the number of occupied houses was reduced to 10,158, and the average of occupants increased to $5\frac{1}{2}$. In 1869, there was a slight increase of houses inhabited to 10,180; the number of occupants averaged $5\frac{1}{2}$. From the foregoing it will be seen that of the dwellings existing in 1865, five hundred and thirty-eight were unoccupied or not habitable in 1869. The houses, newly erected during the period, are not included; if these could be added the disparity would be greater.

This increase in the average number of occupants of each house indicates a certain extent of over-peopling of the dwellings: and this in the face of the fact that there are many hundreds of houses presumably habitable, yet which are not occupied.

The population at the commencement of 1861 was 49,520, I have estimated the people, at the end of 1869, to have numbered 55,905. Therefore during the nine years, the population has been increased by the addition of 6,385 persons; or at the rate of 709 a year.

The various averages which follow are calculated on an assumed datum of population; that datum is the number of persons supposed to be living in the middle of the period under investigation. The middle of the period would be the 1st of July, upon that day, I assume the number of the inhabitants of the parish to have amounted to 55,678.

2—*Marriages.* The marriages registered in the year were 707; of these 623 were celebrated in Chapels, or at the offices of the Registrars, and 84 in Churches. The marriages for

all England were to every person living, 16·16; in Merthyr the proportion was 12·7; so that the marriages were 4·9 less than the average. The marriage rate is taken to be a fair index of the prosperity of the people, its having been a fourth below the average, would show that labour was less remunerative in this District, than it was in the kingdom generally.

3—*Births.* The Births registered were 1011 males, and 941 females, making 1952. The average of the four preceding years was 2100; a diminution of 148 occurred in 1869. Of the total Births, 104 were illegitimate. For all England, the annual Birth rate of the year was 35·34: the average for the parish of Merthyr was 31·45, that is 3·89 per 1000 living less than the average. In the last published Report of the Registrar General, that for 1868, the proportion of children born out of wedlock was, for all England 59 per 1000 Births, in South Wales 63, for Merthyr the proportion would be equal to 53.

4—*Vaccinations.* The Quarterly Returns obtained from the Public Vaccinators, show that 1815 children were successfully vaccinated by them in 1869. Comparing this number with that of children born, and bearing in mind the high rate of mortality in early infancy, I think the practice of vaccination is shown to be sufficiently general amongst our people.

5—*Deaths.* The record of Deaths is considerably longer than those of the two years last past: the number who died is 1269. The average of deaths in the two previous years was 1132: the mortality in 1869 has exceeded this average by 137. Upon the estimated population, the Death rate would be equivalent to 22·79 per 1000. The mean of the two past years was 20·56: thus the rate of mortality has been increased by 2·23 per 1000, as compared with the two years immediately preceding this. But comparing

the mortality in 1869, with the mean rate of the previous 19 years, (that is from 1850, when your Board was first formed,) which rate I find was 27·41; the Death rate of the last year is shown to have been less by 4·42 than that average mortality, this would indicate an economy of human life of 242 on the year. It is usual to deduct from the total of Deaths, the number of those, who dying at the Union Infirmary, had been removed from other parishes. Of the 93 deaths at the Infirmary, 40 were not Merthyr poor; deduct these from 1269, and you have 1229 as the number to be debited against the Parish of Merthyr: this number would give a rate per 1000 of 22. In 1869, the Death rate for all England was 22·64, thus the rate of mortality in Merthyr exceeded that which prevailed in England and Wales by 0·15 per 1000: but comparing this Death rate with the mean rate which prevailed in 142 Districts, and 56 Sub-Districts comprising the chief towns of England and Wales, (in which category Merthyr is placed,) namely 24·60: the Death rate *including* non-parishoners is 1·81, and *excluding* non-parishoners, 2·60 per 1000 less than in the chief towns.

In previous reports I have called your attention to the results of the enquiry instituted and published by Dr. George Buchanan as to the improvement in the public health in this district, as proved by the diminished death rate. He stated, 1st—That the deaths from all causes, at all ages, per 10,000 of the population yearly, before any works were in operation, were **332**; 2nd, That during the period when the works of paving, inspection, and nuisance removal were actively done, the proportion was reduced to **280**; 3rd, That after the addition of the water supply, and during the formation of the main drainage, it was further lessened to **262**; and 4th, I may add, that in the period (1866 to 1869) when the house drainage had been partially effected, the average mortality was only **222**. *A saving of human life as compared with the former dark times in Merthyr of* 100 *lives in each* 10,000 *of the people; this upon a population of* 55,678, *would represent a saving of six hundred and twelve lives a year.*

6.—*Deaths in each District.* For the purposes of registration the parish of Merthyr is divided into two districts. The upper has within it Dowlais, Penydarren, and Tydfil's Well; in the lower are included Merthyr, Gellydeg, and Troedyrhiw. The number of houses in each district is very nearly the same, I divide therefore the population of the parish into two halves of 27,839.

The deaths in the *Upper District* amounted to 644, add to this number half, $53 \div 2 = 26$, of the mortality of parishioners in the Union Workhouse $= 670$, this would give a death-rate of 24 per 1,000. In *Lower Merthyr* 532 persons died, adding to these also the proportion of workhouse mortality, 27, and 559 is the sum: the average of deaths in the lower district would be 20 per 1,000.

It will therefore be apparent that in Upper Merthyr greater proportionate mortality takes place than in the Lower District.

7.—*Deaths in Union Workhouse.* 93 fatal terminations of illnesses occurred in this establishment. 40 of the persons who died there had been removed from other parishes: of these 24 came from Aberdare, 13 from Vaynor, and 3 from Gellygaer.

8.— *Causes of Deaths.* I have deemed it convenient for the sake of comparison to prepare each year abstracts of the large tables which may be found at the ends of the annual reports I have presented to you since 1866. In the one which follows the mortality from the various classes and orders of disease may be seen at a glance; to those who may be interested in deciphering the hieroglyphics of Disease, the larger table will afford the means.

Abstract of Mortality in Merthyr Tydfil.—1869.

Classes of Diseases.	Ages under 5		Ages above 5		Totals.			Deaths from all Causes
	M.	F.	M.	F.	M.	F.		
CLASS 1.—GENERAL DISEASES.								
Order 1. Contagious, Epidemic, &c	24	20	48	48	= 72	68	= 140	
2. Constitutional	64	44	121	100	= 185	144	= 329	
								= 469
CLASS 2.—LOCAL DISEASES.								
Order 1. Nervous System	86	71	45	25	= 131	96	= 227	
2. Circulation	1	1	28	23	= 29	24	= 53	
3. Ductless Glands	0	0	0	1	= 0	1	= 1	
4. Respiration	64	56	55	34	= 119	90	= 209	
5. Digestion	18	16	16	27	= 34	43	= 77	
6. Urinary	0	0	20	7	= 20	7	= 27	
7. Diseases of Women	0	0	0	9	= 0	9	= 9	
8. Cutaneous System	1	0	3	1	= 4	1	= 5	
								= 608
CLASS 3.—DEVELOPMENTAL.								
Order 1. Debility from age	0	0	29	42	= 29	42	= 71	
2. „ of infancy	27	18	0	0	= 27	18	= 45	
								= 116
CLASS 4.—VIOLENT DEATHS	6	9	53	3	= 59	12	= 71	
								= 71
Causes ill defined	2	1	1	1	= 3	2	= 5	
								= 5
	293	236	419	321	= 712	557		
	529		740					= 1269

Population..... Under 5 years, 8547 ; above, 47131=55,678.
Proportionate Mortality per 1000.. „ 61½ ; „ 15½ = 22¾.

9.—*Deaths from Contagious Epidemic, &c., Diseases.* These Diseases, characterised generally by the presence of Fever, did not prevail to the same extent in 1869 as in the previous years: the mortality fell to 140, as against 182. *Measles* which afflicted many children in 1868 disappeared in the early part of the succeeding year, two deaths only were attributed thereto. In its stead, *Scarlet Fever* appeared in the autumn of 1869, and continued to spread throughout the autumn and winter; 44 deaths were set down to this Disease. Late in the year, *Hooping Cough* appeared, only 4 deaths occurred. The fatal virulence of this and the preceding ailing were more fully developed in the spring of the succeeding year.

Typhus Fever, occasioned the deaths of 69 persons. The Epidemic which prevailed in Dowlais in the last quarter of 1868, continued to spread in the spring of 1869; as no means existed of housing the sick in places properly fitted for their reception, the efforts of the medical gentlemen in charge of the cases were almost nullified by the insufficient ventilation of the residences in which the sick lay; but all that could be suggested in the way of purifying the air of the rooms was assiduously done. In February you asked for the assistance of an Inspector from the Medical Department of the Privy Council; J. Netten Radclyffe, Esq., was entrusted with the duty. He fully enquired into the causes of the inception and spread of the Disease—his report is entered on your minutes. Acting upon his suggestion you caused to be built in Dowlais, at a cost of more than £1,000, a Hospital wherein 32 patients might be treated. By the time this was ready the approach of summer, and the consequent free admission of air into the houses of the people, caused the gradual subsidence of the Disease: but throughout the summer isolated cases of Fever occurred in Dowlais and Tydfil's Well: as the cold weather came on, and the houses, ventilated only by front windows, were kept more and more close,

many cases of Typhus occurred, so that by November a veritable epidemic took place in the last-named District.

In the last quarter of 1868, and the first of 1869, your Inspector, Mr. Benjamin Howells, had notice of 402 cases of Typhus. By dint of unwearied enquiry he was able to trace all these cases through their various communications back to the one case which occurred in October, 1868. His valuable research demonstrated that it was by direct communication with the sick that those around them became infected. As in this outbreak, so also in the one which occurred in the autumn and winter of this year in Tydfil's Well, Mr. Howells proved to me that the "contagium" causing the cases of Disease, was derived from isolated cases, continuously propagated, throughout the summer and spring months of 1869, and the winter months of that year and of 1868.

From its epidemic outbreak in the last week in October until the 31st December, 61 cases were reported from the neighbourhood (Bethesda street, in Tydfil's Well district) in which the first case occurred: all occurred within a radius of two hundred yards from the residence of the persons first afflicted, all were traced back by three lines of communication to the one case whose death was recorded on the 5th September, this person had come in contact with the Disease in a house in Dowlais. In December it was happily arranged that some of the sick should be removed to the Fever Wards of the Union Infirmary; these removals decidedly checked the spread of the Disease. In November, acting upon the suggestions I laid before you, you directed that the House of Refuge in Tydfil's Well, should be fitted and furnished as a Fever Hospital, on the 4th of January, 1870, the first patient was admitted; the wards were placed under the charge of a lady nurse from St. Margaret's Home, and Mr. Webster was appointed medical officer; subsequently between 20 and 30 patients were admitted, their treatment in the hospital resulted most satisfactorily. By the

middle of March the Disease had ceased to spread, and it is to be especially noted that no case afterwards occurred in this District, which could be in any way traced to contact with any of the persons who up to this time had been afflicted. The details of this matter will however be more fully considered in the annual report for 1870.

The experience I have had of the means to be adopted to prevent the spread of Typhus may be thus briefly expressed: Remove the sick at the earliest possible period of their illness to a place prepared for their reception. Remove the friends of the sick to a cottage or rooms temporarily fitted or furnished. Destroy all bedding, used by the sick, by burning. Fumigate the house by burning sulphur therein, close it for 24 hours, then freely sprinkle carbolate of lime over every thing in the house. During the sickness (whether in the wards of a hospital, or if removal is impossible or imprudent), let the air be well charged with the vapour of carbolic acid. On the third day after fumigation with sulphur, remove all woollen, linen, and calico things to a stove; heat the stove to at least 212°: let the articles remain there heated for 24 hours: then remove them, lay them out exposed to the air for a day, afterwards wash them with carbolic acid soap, dry and restore to the owners. Wash all furniture in, and the floors of, infected houses with hot water and carbolic acid soap. Whitewash with freshly-slaked lime all walls and ceilings, having first removed any paper pasted thereon.

When this shall have been done, the parties may return to their homes. This process of cleansing has been effected in about 100 instances by the officers of this Board; *in no instance was there a recurrence of Fever in the houses.*

The average annual mortality from Typhus Fever in England on the mean of nineteen years ending 1868, was 9·2 per 10,000 persons living. The occurrence of 87 deaths, (Typhus 69, Cerebro-

spinal 2, Enteric 16,) in Merthyr, would be equal to 15·6 per 10,000; thus exceeding the average by 6·4, or in other words occasioning 35 deaths more than the average.

In considering the deaths from Febrile Contagious Diseases, I notice the continuous lessening of the number of fatal issues attributed to Typhoid or Enteric Fever. This form of disease is induced by the foul emanations from cesspools, drains, &c., in fact from animal excretions in a state of putrifaction. The daily scavenging of ashes, the abundant water supply, the construction of sewers, and the removal thereby of solid and liquid excretions from the neighbourhood of dwellings, these have done much to eradicate the causes of this class of Fever. Its existence, though in much reduced numbers, points out the incompleteness of the sanitary measures, which you have directed to be executed; when these sanitary measures shall be permitted, by the reversal of the prohibitory decree of the Court of Chancery, to be continued until completed, I am sanguine in the belief that cases of Enteric Fever will be extremely rare in Merthyr.

10.—*Deaths from Constitutional Diseases.* The Deaths from this class of Diseases have increased disproportionally to the increase of the population, the numbers being 329 against 288, in 1869. Upon referring to the tables at the end of the Reports for this and last year, it will be seen that the increase has taken place mainly in those Diseases which are referable to a Scrofulous taint, the number of deaths being 253 in 1868, against 284 in 1869. Poverty is probably the main cause of that constitutional debility which results in the imperfect formation of the blood, in which is the Life. Degeneracy of the animal tissues, formed from this imperfectly vitalized fluid, is a promotive cause of the disease termed Scrofula. Individuals the subject of this Disease are peculiarly prone to those further unhealthy changes in their tissues, which are evinced by softening and

formation of matter in Glands, in tho ends of Bones, in the Lungs, &c., &e. The depression in the Iron trado, whieh had existed for some years, prevailed throughout 1869. This, by redueing their earnings, still further pressed upon our pooror brethren. The small amount of nutritive food, whieh before that, they had to live on, had to be still further redueed; their bodies weakened by long continued existenee upon insuffieient nutriment, were eonsequently prone to those determining eauses, eold and wot, whieh aeting upon their debilitated frames, indueed Diseases whose end was Death.

The proportion of Deaths from Serofulous Diseases in all England is set down by the Registrar General at 34·9 per 10,000 living. In Merthyr the proportion was 49·2: thus being 14·3 in exeess. In other words 67 deaths more than the average.

At page 8 of my fourth annual report to you, that for 1868, the eonclusions as to the mortality in Morthyr from Seofulous Disease of the Lungs, Consumption, eome to by Dr. George Buehanan are stated: in tho four periods taken—Before any Sanitary Works were in operation the rate of mortality was 28·3 per 10,000. During the seeond period, 28. During the third poriod, 24·3. During the fourth period, 66 to 68, 21·5. The statisties of the deaths from Consumption in 1869, are far from being so favourable as in the past years. The total of deaths was 156, this would indicate a proportion of 28 deaths per 10,000 living. Thus earrying our Death rato baek to tho high average of tho years from 1855 to 1859. The mean annual rate of mortality in England is stated to be 26·75; our death rate exeeeded tho average by 1·25. This would show an ineroased loss of life of 70 persons in the year: thus pointing out that the inereased mortality attributed to Scrofulous Diseases is due to tho larger number of deaths from Consumption: this is further shown to be the ease by enquiring as to tho numbers who died of this diseaso at ages varying from 20 to undor 40: tho number in 1867 wero 63; in 1868, 62; and 1869, 94. An in-

crease of 50 per cent. in the last year over the numbers in the previous years. You will desire some explanation of this decadence, I believe it may be found in the cause I have already adverted to, the poverty consequent upon the continued depression in the Iron Trade. It is upon men and women in the middle of life, between 20 & 40, that the strain of existing upon low wages principally falls, obliged to use the greatest possible exertion to obtain the means of living for themselves and their families, and having to subsist upon a less quantity of nutritious food, the usual consequences, a deterioration of the life fluid, the blood, resulted; followed by the usual development of Scrofulous Disease.

11.—*Local Diseases.* The Deaths from the many causes grouped under this heading, number 608. This exceeds, by 111, the average of the three preceding years. After allowing for increase of population, and for deaths of non-parishioners, the rate of mortality is greater than the average by 18 per cent. Pursuing the investigation further, it will appear that this increase is to be mainly traced to the larger number of Deaths attributed to Convulsions, and to acute inflammations of the Air Tubes, and of the Lungs, occurring in children. The mortality from Convulsions, 148, represents an increase of 17½ per cent on the very high average of the three previous years; while the deaths among children from acute diseases of the Air passages and Lungs, 110, is equal to an increase of 14 per cent. In the majority of the other diseases named in this category, the diminution of the numbers who died has been sufficient to reduce the gross increase to the rate stated above 18 per cent.

The Diseases to which I have in the above paragraph referred to more particularly, are of that urgent character as to need, imperatively need, early and prompt treatment by experienced medical men, and careful watching by parents and nurses. I will ask the earnest attention of the Board to the comparisons which

follow; in all England the mean average annual mortality from infantile convulsions was 13·1 per 10,000: In Merthyr in 1869, it was 25·5—an excess of 12·4, nearly double. In all England the average death-rate of children under five years from acute diseases of the air passages and lungs was 12 per 10,000: in Merthyr, the rate of death was 19·7 an excess of 7·7. Thus from these named ailings, the excess of deaths in Merthyr is equal to a loss of 110 *lives* annually more than the ratio of deaths in all England.

From the above it will be apparent that there is urgent need to repair these openings in our sanitary armour. Probably much of this unnecessary mortality of the innocents may be owing to the improper food with which they are fed, and the great exposure to cold and wet to which their partially clothed bodies are exposed.

12.—The remaining causes of Death, and the fatalities referred thereto, do not in any case, so far exceed the averages as to call for remark. But observing that in one assigned cause there has been a great improvement, I think it right to call your attention to it. In the second report, at page 47, I pointed out that the mortality after child birth was in Merthyr, nearly double that which prevailed in the kingdom generally. In 1866 the deaths of child-bearing mothers, during and after confinement, was one out of 105: in 1869 but 7 deaths occurred, this would be equal to a proportion of 1 out of 280.

I notice further that "Debility of Infancy" is set down as a cause of death in 45 instances: in 1868 the numbers so recorded were but 18. In the fourth report, pages 8 and 9, I drew attention to the fact that many deaths of young children were assigned to convulsions; it is, I think, gratifying to record that a more reasonable cause is now used to designate those deaths of very young children.

The Deaths attributed to Multiple Injury, those accidental causes to which the workmen engaged in our Iron and Coal Mines, and in

the Iron Works are so greatly subject, number this year 45; in 1868 the sum was 44. In this, as in each of the two last years, I have noticed that one death in each year is attributed to "Suffocation." Those deaths have been caused by the inhalation of the fumes of gases from the Blast Furnaces, which are conveyed in channels of brick or iron from the furnaces to the many parts in which the heat caused by their ignition is used in the various processes of metallurgy; in their passage through these channels some chinks exist through which they escape—it has happened that three persons have lost their lives as a consequence of the asphyxia induced by the inhalation of these poisonous gases.

Lastly, I must say that to such vague terms, as "Natural Causes," "Visitation of God," but five deaths are set down. The number is now so few that I am induced to think that a very slight degree of *will*, on the part of the Coroner and his Deputy, may enable those who have to chronicle the results of Disease to omit this unfit heading from their catalogue.

13.—*Ages at Death.* Of the 1,269 deaths, 529 were under five years old, and 740 above that age. The number of deaths of young children is, as I have frequently before had to remark, a good test of the general healthiness of a district: and as the proportion which the above number 529 out of 1,269 bears to 1,000, is 416, the rate of mortality of those who had not completed their fifth year of life may be satisfactorily compared with the similar rates for the years from 1866 to 1868. These were 443, 409, and 441.

The number of aged persons is also worthy of note. 83 persons had, at their decease, past their threescore years and ten; 34 had fully completed and passed their fourscore; three attained the age of ninety and upwards, while one death is recorded at the advanced age of one hundred and one.

Again, I must claim the privilege of the historian, and ask you to look into the past. In the report of your temporary Medical Officer of Health, Dr. Kay, (page 15, table 9,) it will be seen that the average number of deaths of children under five years was in 1852, 527 out of each 1,000 deaths. In 1869 the death-rate had diminished to 416: *a saving of one hundred and eleven lives.* In 1852, the number of persons who at their decease had attained the ages of 70 and upwards was 90, being in proportion to 1,000 deaths of 55. In 1869, the aged who passed from earth having attained or passed their 70th year of life, numbered 121: being in proportion to 1,000 deaths of 95.

14.—*Average Age at Death.* The last test to which the sanitary condition of a town is put, is that of ascertaining the average age at Death. For each district in each quarter I have been careful to gather the materials for this crucial test. By adding up the ages of the dead, and dividing the total by the sum of the numbers who died, the following are the results:—

	DEATHS.		AVERAGE AGE		
		YRS.	M.	D.	
UPPER MERTHYR:					
Dowlais District...	392	25	0	0	
Penydarren do.	96	25	4	26	
Tydfil's Well do	156	26	1	22	
	=644				=25 2 0
LOWER MERTHYR:					
Merthyr District	278	26	9	22	
Gellydeg do.	96	28	4	11	
Troedyrhiw do.	158	20	11	16	
	=532				=25 3 7
UNION HOUSE:					
Parishioners	53	31	7	18	
	= 53				=31 7 18
	1229				25 6 11
Non-Parishioners ..	40	31	9	15	
	1269				25 10 5

Let me ask you again to look back into the story of the health of Merthyr: In 1852, the average duration of life was 17½ years, in the years from 1866 to 1868, 26 years, *and in* 1869 25¾ *years.*

15.—*Interments of the Dead.* From the returns given me by the authorities, I find that 610 burials took place at the Cefn Cemetery; 207 at the Church, and 198 at the Pant Cemeteries in Dowlais; 42 in the Parish Burial Ground in Thomas Town; 26 in the graveyard at Graig, 21 at Troedyrhiw, 14 at Hebron, 2 at Hermon, 3 at Caepantwyll, 2 at Adulum, 1 at Zion, and 1 at Ynysgau, making a total of 1,127.

Chapter 11.—*Price of Iron, Rate of Wages, Prices of Food, Pauperism, and the Weather.*

16 —*Price of Iron.* I derive my information on this head from the pages of the Engineer newspaper. By adding the weekly quoted prices of Bar Iron "in Wales," I learn that the average price was £6 4s. In 1868, it was £5 15s.; in 1867, £5 17s. 6d.; in 1866, £6 4s. 6d.; and in 1865, £7 10s.

17.—*Rate of Wages.* Throughout the year the rate of wages was not subjected to any reduction. The gradual improvement in the demand for Iron, induced hopes that the payments to the workmen might have been increased; the advance however did not take place until the commencement of the year 1870. I am led by the information I have received from various quarters to conclude that the sums set down as the weekly earnings of the workmen in the Report for 1868, may justly be taken as the rate of wages throughout 1869. Following the plan I have hitherto adopted, I have worked out the numbers of the various workmen employed at our staple trade. The figures are based upon the census returns of 1861. Males of 20 years and upwards are alone referred to. Against each class I have set down the average weekly earnings.

The Coal Miners I take at 4700, earning on an average 16s. 6d. a week. The Ironstone Miners at 1576 earning 15s. a week. The Fillers and Founders at Blast Furnaces, the Puddlers, Ballers, Rollers and Railmen at 3320, earning 25s. a week, and the Craftsmen, Quarrymen, Hauliers and Labourers at 1590, earning 15s. weekly. These several earnings would give a mean average weekly wage of 18s. 7d. to each adult working man. The whole number of adult working men employed would be 11,186, and the wages paid weekly to them £10,402.

18—*Prices of Food.* I am again indebted to the Provision Contracts made quarterly by the Board of Guardians for the average prices of the chief articles of food. The price paid for Flour, best seconds, averaged 39s. 1½d., as against 48s. 3d. in 1868, 48s. 10½d. in 1867, and 40s. 4d. in 1866. For the hundredweight of Potatoes, 3s. 8½d. was paid as compared with 4s. 10d. in 1868, 4s. 3d. in 1867, and 3s. 9d. in 1866. Beef and Mutton were supplied by the Contractors at 5½d. per pound.

19.—*Pauperism.* To the very valuable Abstracts published by the Board of Guardians, I owe also the information that the average number of persons who received relief in the year ending March, 1870, was 4524; in the previous years back to 1866, the numbers were 3829, 3739, and 3378. The Vagrants relieved during the year ending March, 1870, were 2043, as compared with 4274, 3582, and 2238 in the former periods. While the diminution in the number of Vagrants relieved, (from 4274 in the year ending March, 1869, to 2043 in that ending March, 1870,) is very remarkable; the reduction to 540 in the *half-year* ending March, 1870, is a still more commendable decline, which is doubtless to be attributed to the Resolutions adopted by the Board of Guardians, in accordance with the following Report:—

At a meeting of the Board of Guardians, on the 16th September, 1869, the following report from the Tramp Committee was read :

"Upon referring to the tramp book it appears that with few exceptions the tramps relieved are in the prime of life, and that many of them are Artizans in trades in which there is employment at the places from which the tramps profess to come, that others are sailors who appear to be wandering inland as vagrants, and others appear to be idle persons wandering about avoiding work."

"The Committee recommend that the Magistrates and the Police Authorities be requested to direct the Police to apprehend all professed tramps found in the district of this Parish, and to proceed against them under the Vagrancy Acts."

"That the interference of the Magistrate and Police Authorities be also requested to prosecute all wandering mendicants in the District."

"They also recommend that the Superintendent of Police be directed to give no relief to professed tramps, except in cases of sickness or accident, and that in relieving all other applicants he should satisfy himself of the truth of the accounts they give of themselves, and that they are in his opinion fit persons to have relief."

"The Committee recommend that no other alteration be made in the present system of tramp relief until experience is had of the result of the means now recommended."

"WILLIAM SIMONS, *Chairman.*"

20.—*The Weather in* 1869 *and its influence upon Health.*

The influence of atmospheric changes upon the health of the inhabitants of a district may be easily traced in such a parish as Merthyr Tydfil ; situated in an upland valley formed by a mountain river—the Taff, which springs from the most elevated spot in South Wales, the Brecon Beacon, the deep and narrow gorge, through which it runs rapidly to the sea, is bounded by precipitous sides rising to ridges, ranging from 12 to 16 hundred feet in height above the sea level, a place so situated is peculiarly liable to those vicissitudes of cold and wet by which the human frame is detrimentally affected. West winds bring with them clouds whose moisture is quickly condensed by the high points of the hills which encompass the valley, north and east winds blow cold over elevated

bog lands saturated with moisture. These influences, acting upon a population whose industry was ill rewarded owing to the depression of the Iron Trade, were in 1869 very painfully manifested.

1st Quarter: In *January* rain fell on sixteen out of thirty-one days to a depth of 10·8 inches, the mean night temperature was but 35°, while in the day it averaged 45°. The fall of the Barometer to 29·15 on the 3rd was indicative of the thunder storms which came on in the evening of that day, and again in the evening of the 5th. During the three last days of January, the rainfall amounted to five inches: of which 2½ inches fell on the 31st. Wet weather continued throughout *February*, the amount of rain collected—8·95 inches, fell on nineteen out of twenty-eight days, a great storm of wind from the west, and of rain, prevailed from the 7th to the 9th,—the water collected measured 3¼ inches. The night temperature was 35°, in the day it averaged 46°. The month of *March* was fine and cold, it rained on eight days to a depth of 2·89 inches: the night temperature averaged 30°, that in the day 42°.

During the Quarter it rained on 43 days out of 90. The measured fall of rain amounted to 22·64 inches. In the last quarter of 1868, rain fell on 53 days to a depth of 22·94 inches. Thus during the six months of winter, it rained on 96 out of 182 days, the total rainfall amounting to 45½ inches.

This long continuance of wet weather acted most perniciously; for remembering that the houses in the parish are mostly built of a porous sandstone, on foundations of unmortared stone, with floors of paving-stone laid on the soil after the removal only of the sod the result was to saturate the foundations of the abodes of our poorer brethren with water, that water moreover charged with the excremontitious deposits freely scattered in backyards and gardens: the cold winds required that the doors and windows should be kept

closed, and thus that thorough ventilation which houses so damp imperatively needed was prevented, lastly food was dear, and labour ill remunerated; these various causes combined to raise the average rate of mortality to 28 in the thousand.

2nd Quarter: The genial influence of the sun's rays began to be felt in the second week in *April*, the night temperature was more elevated—40°, rain fell on 11 days, but only to the extent of 1·96 inches, south east and east winds prevailed, and the days were clear and bright. *May* was a month of showers, it rained on 17 days, the amount collected was 4·19 inches; the mean temperature of the month was 51°. *June* was almost a cloudless month, rain fell on 5 days, the quantity being 1·13 inches, the day temperature averaged 75°, while the mean temperature of day and night was 58°. The mean temperature of the quarter was 51·5, the rainfall 7·28 inches on 33 days out of 91. The healing influence of sunshine was felt throughout the quarter, as the death-rate fell to 22⅓ in the thousand.

3rd Quarter: Throughout the month of July, the temperature of the air was very high; on many days rising to 84° in the shade, and on the 18th to 120° in the sun: the mean day temperature was 74°, and that of the night 49°. It rained on seven days to a depth of 1·48 inches. The first days of *August* were ushered in by some much needed showers of rain, on the 7th there was a great storm of wind and rain; fine weather set in on the 17th, and continued until the end of the month. In the week from the 22nd to the 28th, the thermometer was 113° in the sun at noon, in the shade 81°, and at night 55°. On the last day of August the night temperature fell to 33°. The mean temperature of the nights was 48° and that of the days 71½°. The rainfall on nine days amounted to two inches. On the 29th a gale from the east blew for 24 hours. During the month of *September* much rain, 9·32 inches, fell on 22 days: the mean heat of the air at night was 43° and in the day 63°

The rainfall in the *Quarter* on 38 out of 92 days was $12\frac{8}{10}$ inches the mean night temperature 47°, and that of the day $69\frac{1}{2}$°. As usual when the weather is warm and dry, diseases are reduced to their minimum, those which do prevail are more amenable to treatment, and the death toll is reduced: the rate of mortality in the Quarter was but $17\frac{1}{2}$ in the 1000.

4th Quarter. The first week of October was wet, but on the 6th the wind veered to the north, and fine clear days followed: on the 13th a week of rainy weather commenced, succeeded by fine days and nights until the end of the month. Snow fell on the 27th, the rain gauge measured 4·27 inches, this quantity fell on 15 days. The night temperature fell to 40°, that of the day to 60°. In November rainy days outnumbered the fine ones; rain fell on 19 days to a depth of 4·97 inches, and as the north winds generally prevailed, the temperature at night was lowered to 37·4°, and that of the day to 50°. December as usual was a month of frost and snow, high winds and heavy rain. A gale of wind from the west and north-west, blew from the 13th to the 19th. Snow fell on the 4th, 22nd, and 26th. The total of rain which fell on 15 days was 8·6 inches: the mean degree of cold at night was 31°, and in the day 45°.

The Rainfall of the Quarter reached 17·84 inches, it fell on 49 out of 91 days. The mean temperature night and day was 44°. A necessary consequence of this inclemency was the occurrence of a vast number of cases of sickness, more especially of acute Diseases of the Respiratory Organs in the aged and very young: thereby the Death rate was raised to 24 in the 1000.

21.—*Rainfall in the year.* The amount of rain collected during the year 1869, was 60·57 inches: this quantity fell on 163 days. The mean number of days on which it rained, during the four years from 1866 to 1869 was 172, and the average

fall of Rain, 58 inches. The Rain Gauge used was Cassella's, the diameter of gauge, 6 inches, placed two feet above the ground, at 550 feet above the sea level.

I notice in Symons' British Rainfall for 1869, page 132, that the mean of two series of observations taken at Cardiff, elevation 20 to 40 feet, gives the Rainfall at 39·5 inches on 176 days; at Pentyreh, elevation 100 feet, Rainfall 51·62 inches on 198 days; at Aberdaro, elevation 440 feet, the mean of two series of observations, 63·89 inches on 156 days. At Sirhowy, at an elevation of 10·55 feet the rain-fall is given at 64·29 inches on 191 days.

CHAPTER 3.—*Progress of Sanitary Works and Practical Operation of Sanitary Laws in* 1869.

22.—*Water Supply.* I have been careful, at different periods of the year, to subject to analysis the water supplied to the public. The result has been to show that the mean degree of hardness in dry weather is 3, and immediately after rain 2½ degrees. During the former weather, there is no trace of organic matter to be found; but after rain the water is too distinctly coloured with peat. I have before said that the presence of this very dilute solution of peaty vegetable matter is not injurious to health, but that it is unsightly and displeasing As long as the water is drawn during floods *from the River*, so long will this reddish-brown colour be observed. At some not distant time, I will hope that a small supply-reservoir may be made, higher up the valley, between Llwynon and Pontardaf, in which water can be retained in sufficient quantity, for say seven days' supply, to do away with the need of constantly taking the supply from the river. The number of houses charged with water rent is the same as in 1868—10,070.

23.—*Sanitary Improvements.* Your Surveyor tells me that I cannot add any to the list of good work done during

the year, except the erection of twenty-seven ashpits: it has been admitted, by those who at first vehemently opposed their being built, that a very great improvement in the cleanliness of neighbourhoods where they have been placed has resulted. The Chancery suit instituted against the Board by a Company of Colliery proprietors, who asserted that the health of their cattle was injured and their boilers fouled by the sewage water discharged into the Taff, and the injunction subsequently granted to restrain this Board from continuing to do them and their cattle and their boilers this grievous harm, these have wholly prevented any extension of those sanitary works, whose formation and completion would have resulted in manifest and great benefits to the health of the mass of the people.

24—*Common Lodging Houses.* The supervision of these houses, 15 in number, is placed under the Superintendent of the County Constabulary: during the year two persons were summoned, and fined for breaches of the Regulations as to the number of lodgers taken in; in all other respects, Mr. Thomas states that the Bye-Laws were complied with.

25—*Inspection of Houses let in Lodgings.* At the end of 1868, 206 houses were under inspection, in the course of 1869, 71 were added to the number; so that the Inspector specially charged with the duty of supervision, Mr. Howells, has had to visit monthly 277 houses, to see that the residences are kept clean, the beds and bedding also clean, the houses ventilated, and that the conveniences were in proper order. The Inspector has reported to you that all the Regulations made by you have been observed.

26--*Inspection of Workshops.* I have continued throughout the year to execute the duty which you requested me to undertake, of visiting those places of manufacture which were included under the definition of handi-

crafts. Generally the law has been obeyed; but in the case of those who are engaged in dressmaking, the sudden emergencies of the trade have seemed to require of the hands employed, longer hours of labour than was permitted under the statute. It was my duty to report to you one such breach of the law, you directed that the parties should be summoned. Your legal adviser had this done, and upon the hearing before the Justices, the defendants were convicted and fined.

27.—*Inspection of Houses infected by Fever.* During the year, above 200 habitations were infected. These were frequently visited by Inspector Howells and myself. The powers given by the Sanitary Laws were as fully carried out as possible. Disinfection and cleansing were thoroughly done, but ventilation, that primary means of prevention, could not be effected to the extent that was needed. I reported to you, at different times within the year, 110 houses, in which fever had prevailed, through none of these could a current of air pass. You directed that the legal steps, rendered necessary by "The Artizans and Labourers Dwellings Act, 1867," should be taken to cause the parties, who were responsible, to remedy the defective ventilation. Of the usefulness of this Act, I entertained a very high opinion, until I had to work with it: it then proved so tedious in its operation, that the notices served had to be abandoned, and it was decided to proceed on the next occasion under the Nuisances Removal Act.

I have already, in my fourth annual report to you, stated the principal causes of the inoperativeness of this well-intentioned measure, but my experience of its working may be more fully seen in the evidence which I was requested to give before the Royal Sanitary Commission on the 12th July, 1869. See first Report, pages 345 to 351, questions 6,280 to 6,293.

It will be well here to recall to your minds the fact, brought out by the house to house inspection made in August, 1866, that of 9,880 houses in the town, 4,084 had no means of thorough ventilation.

SUMMARY.

In reviewing the sanitary story of the year, I must first ask you to observe the increase in the number of paupers relieved; in 1869 they amounted to 47 hundreds, the mean of the three previous years being 36 hundreds. The import of this increase is plain, it represents diminished clothing, and diminished food, and consequently greater liability to disease, engendered by the insufficient nourishment, and greater accessibility to sickness as the result of exposure to cold and wet.

Passing next to the diseases which have prevailed, it will be noticed that scrofulous affections of the lungs, infantile convulsions, and acute inflammations of the respiratory organs have occasioned, in each instance a mortality in excess of the average: and that these excesses account for the increase in the general mortality. Pausing to consider what may have been the causes of these increased averages, it will be apparent that the diseases named are of such a nature as to be aggravated, influenced, or induced by climatic changes, acting upon human beings depressed by hunger, and inadequately protected by clothing.

The fact that the rate of mortality varies in the different districts of the parish should also engage your attention. Thus in Upper Merthyr, the death-rate was 24, as compared with 20, in the thousand, in Lower Merthyr. Pursuing the enquiry, it appears that in the division of Gellydeg the death-rate is 16½, in Merthyr 19½, Tydfil's Well 21½, Penydarren 24, while in Dowlais and Troedyrhiw it exceeds 25, in the thousand. It is plain from

these averages that the causes which influence health unfavourably are most prevalent in Penydarren, Dowlais, and Troedyrhiw. The inferences which these figures will induce you to form, will be confirmed by your knowledge of the localities: in Penydarren and in Dowlais there are many hundreds of small unventilated houses crowded with a population, many of whom are not careful as to cleanliness: while at Troedyrhiw the dampness of the foundations of the houses built on the flat land, and the excessive moisture (from the canal, mill race, and river,) ever present in the air, these causes each in its way have tended to increase the death-rate.

In sanitary works *progress until completion* is a necessity, in order to insure that full measure of benefit which experience has shown to be the invariable result of well-constructed sewers and drains, efficient scavenging, good water supply, and thorough ventilation of all dwellings. The legal difficulties thrown across your path, unfortunately prevented you from carrying on throughout the year any works of house drainage. These works generally carry with them the full ventilation of those houses which have no access to backyards. To this most regretable suspension I attribute much of the high rate of mortality which prevailed in the three divisions I have named, as it was in those parts of the town the sewers were latest constructed, and therefore the house drains had in comparatively few cases been made, when the injunction of the Master of the Rolls caused you to abstain from ordering any further progress with these sanitary works.

Notwithstanding these various unfavourable causes, strengthened and heightened as they were by the very wet and cold winter of 1868-9, and the equally cold and wet weather in the last quarter of 1869, the mean average death-rate, 22·79, exceeded, as I have shown, the average for all England, but by 0·15 in each thousand living: if however the average be compared with the mortality in

the town districts of England, 24·6, it will be seen that the death-rate among our people was 2·6, per thousand less than that average.

In the Death rate of *Young Children* there is much that is satisfactory to bo noticed, the proportion during 1869 was **416** out of each 1000 deaths. This is less even than the mean of the proportions of thc three last years—431; to which number I have before directed your attention as being eminently distinctive of the improvement going on in the health of the inhabitants, as compared with the unhappy past, for in 1852, the proportionatc rate of infant mortality was 527. So also with regard to the *Aged*, to those whose lives were extended beyond three score years and ten, the proportionate number in 1852, was 55; in 1869, the number had increased to **95** out of each 1000 Deaths. And lastly with regard to the mean *age at death*, in 1852 the average age at death was 17½ years; on the mean of the three years 1866 to 1868, 26 years; and in 1869, **25¾** years.

The Soldier who, after many a hard-fought battle through which he had passed victorious, meets with a moated fortress, or entrenched hoight, which checks his progress, would be apt while duly weighing the possibility of defeat, to look back to his triumphs won, and strengthened by tho recollection would press onward warily but boldly against tho foe: I trust it may be so with you, gentlemen; year after year it has been my privilegc to paint in words the triumphs you havc won, not as warriors have dono by destroying human life, but by means wisoly dovised, softening suffering, staying the mourner's tear, and prolonging the span of human existenco, by surrounding men with pure air, and supplying them with pure water. Your career of victories won over diseaso and death has been arrested, tho dial of tho Registrar's records points to a sum of departed human beings larger by many scores than you have lately been used to see; the causes of this pause in your

career I have already stated, they are in your power to remove; I feel sure that you will not halt in your progress, you will not hold back from the toil of again pressing onward and upward to win back lost ground, nay to gain more, and to widen your foothold upon the sacred enclosure of health, upon which you will hope to place the people who have trusted you.

I am, Gentlemen,

Your obedient Servant,

T. J. DYKE,

Medical Officer of Health.

M. W. WHITE AND SONS, PRINTERS, MERTHYR-TYDFIL.

CAUSES OF, AND AGES AT, DEATH IN MERTHYR-TYDFIL, IN 1869.
INCLUDING 93 DEATHS AT THE UNION WORKHOUSE.

DISEASES.	AGES BELOW.																				
	1	2	3	4	5	Below 5 M.	Below 5 F.	10	20	30	40	50	60	70	80	90	100	110	Above 5 M.	Above 5 F.	TOTALS
Class 1—General Diseases																					
Order 1—Contagious, Epidemic, &c.																					
4 Measles	1	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5 Scarlet Fever	1	10	10	7	7	20	15	9	0	0	0	0	0	0	0	0	0	0	2	7	44
7 Typhus „	1	0	0	0	0	1	0	7	11	8	11	11	15	4	1	0	0	0	38	30	60
8 Cerebro Spinal „ ...	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	1	2
9 Enteric „ ...	0	0	0	0	0	0	0	4	5	1	0	2	0	4	0	0	0	0	6	10	16
15 Ague	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
20 Hooping Cough... ...	1	1	1	1	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4
30 Erisepelas	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
						24	20												48	48	=140
Order 2—Constitutional.																					
34 Acute Rheumatism ...	0	0	0	0	0	0	0	0	4	0	0	0	2	1	1	0	0	0	4	4	8
38 Chronic „ ...	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	2	1	3
40 Chronic Gout	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1
43 Syphilis	11	0	0	1	0	8	4	0	1	0	1	0	0	0	0	0	0	0	2	0	14
44 Cancer...	0	0	0	0	0	0	0	0	0	0	0	2	3	3	1	0	0	0	7	2	9
49 Scrofula	0	0	0	0	0	0	0	1	5	1	0	1	3	0	0	0	0	0	7	4	11
„ Do. with Tuberele																					
„ A. of the Brain...	10	4	2	4	1	14	7	6	2	1	0	0	0	0	0	0	0	0	5	4	30
„ B. „ Lungs..	0	0	0	0	0	0	0	12	14	50	37	21	9	13	4	0	0	0	87	73	160
„ C. „ Mesentery	38	21	8	4	4	42	33	6	2	0	0	0	0	0	0	0	0	0	2	6	83
53 Purpura	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	0	2
57 General Dropsy... ..	0	0	0	0	0	0	0	0	1	0	1	1	0	2	3	0	0	0	2	6	8
						64	44												121	100	=329
Class 2—Local Diseases.																					
Order 1—Nervous System.																					
61 Inflammation of Brain	2	2	1	2	1	4	4	6	1	1	0	0	0	0	0	0	0	0	3	5	16
65 Apoplexy	0	1	0	0	0	0	1	0	1	0	3	1	2	3	1	0	0	0	8	3	12
70 White Softening ...	0	0	0	0	0	0	0	0	0	0	0	3	5	2	2	0	0	0	8	4	12
77 Spinal Atrophy	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	2
80 Malformation of Spine	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
64 Paralysis	0	0	0	0	0	0	0	0	0	0	3	4	2	11	8	1	0	0	18	11	29
90 Tetanus	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	2
92 Infantile Convulsions.	120	15	10	1	1	81	66	1	0	0	0	0	0	0	0	0	0	0	1	0	148
93 Epilepsy	0	0	0	0	0	0	0	0	2	0	1	0	0	1	0	0	0	0	3	1	4
105 Insanity	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1
						86	71												45	25	=227
Ord 2—Circulatory System																					
Heart Disease	2	0	0	0	0	1	1	2	6	6	7	5	8	11	6	0	0	0	28	23	53
																					= 53
Ord 3—Disease of Ductless Glands																					
286 Addison's Disease ...	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	= 1
Ord 4—Respiratory System																					
288 Croup	3	7	6	2	4	10	12	1	0	0	0	0	0	0	0	0	0	0	0	1	23
293 Laryngitis	1	2	1	1	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5
306 Acute Bronchitis ...	28	9	3	2	1	18	25	1	0	2	0	1	6	9	6	0	1	0	19	7	69
„ Chronic „ ...	0	0	0	0	0	0	0	0	0	1	2	2	5	12	10	1	0	0	17	16	33
314 Asthma	0	0	0	0	0	0	0	0	0	0	0	2	3	6	1	0	0	0	10	2	12
315 Pneumonia	29	10	5	5	1	33	17	3	0	5	2	1	3	1	1	1	0	0	9	8	67
						64	56												55	34	=209
Order 5—Digestive System																					
365 Dentition	3	1	1	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5
424 Sloughing Sorethroat .	0	2	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3
450 Ulcer of the Stomach .	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	3	4
464 Enteritis	1	0	0	0	1	1	1	0	0	1	0	0	0	2	2	0	0	0	1	4	7
478 Intus-susception ...	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	0	3	2	5
480 Hernia	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	2	2	4
484 Diarrhœa	19	1	2	0	0	11	11	0	0	1	2	0	0	1	2	0	0	0	2	4	28
501 Hepatitis	0	0	1	0	0	0	1	0	0	2	4	1	0	0	0	0	0	0	2	5	8
506 Cirrhosis	0	0	0	0	0	0	0	0	0	0	0	1	4	4	0	0	0	0	4	5	9
531 Peritonitis	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	2
490 Fistula in Ano	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
497 Impervious Anus ...	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
						18	16												16	27	= 77
Order 6—Urinary System.																					
538 Bright's Disease ...	0	0	0	0	0	0	0	1	1	0	3	4	5	8	1	1	0	0	17	7	24
557 Cystitis	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	3	0	3
						0	0												20	7	= 27
Ord 7—Diseases of Women																					
630 Ovarian Disease ...	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	2
708 Childbirth	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	4	4
717 Hœmorrhage after delivery	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1
719 Puerperal Peritonitis ..	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	2
						0	0												0	9	= 9
Ord 8—Cutaneous System.																					
864 Carbuncle	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	0	2
866 Gangrene	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	1	3
						1	0												3	1	= 5
Class 3—Developmental.																					
904 Debility from Age ...	0	0	0	0	0	0	0	0	0	0	0	0	1	12	27	28	2	1	29	42	71
905 „ of Infancy...	45	0	0	0	0	27	18	0	0	0	0	0	0	0	0	0	0	0	0	0	45
						27	18												29	42	=116
Class 4—Violent Deaths.																					
924 Hydrochloric Acid: Suicide	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
938 Alcoholic Poisoning ..	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	0	2
992 Burns and Scalds ...	0	0	3	2	1	2	4	1	0	0	0	0	0	1	0	0	0	0	2	0	8
994 Multiple Injuries ...	0	0	1	2	1	1	3	1	14	7	8	4	2	2	2	1	0	0	39	2	45
995 Asphyxia by—																					
A. Drowning: accident	1	1	1	0	0	1	2	1	2	2	0	0	0	1	1	0	0	0	7	0	10
B. „ Suicide	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	2
C. Overlying	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
D. Carbonic oxide gas	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1
						6	9												53	3	= 71
Causes not specified.																					
Natural Causes	1	1	0	0	1	2	1	0	0	0	0	1	1	0	0	0	0	0	1	1	5
																					= 5
	322	89	56	38	24	293	236	64	76	95	95	76	85	128	83	34	3	1	419	321	= 1269

NOTE.—The figures preceeding the names of Diseases, refer to the numbers in the "Nomenclature of Diseases," published by the Royal College of Physicians of London.